## UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No. END920030067US1

Total Pages in this Submission

10/696511

### TO THE COMMISSIONER FOR PATENTS

Mall Stop Patent Application P.O. Box 1450 Alexandria, VA 22313-1450

|                                                                                    | ion e                 |          |                                                                                                                                                              | ig under 33 | 0.3.0    | . 111(a) and 3                                                                            |                           | B(b) is a new utility patent application for an |  |  |
|------------------------------------------------------------------------------------|-----------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|-------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------|--|--|
| AFE                                                                                | FINIT                 | ry-B     | ASED CLUS                                                                                                                                                    | STERING C   | F VEC    | TORS FOR F                                                                                | PARTITIONIN               | NG THE COLUMNS OF A MATRIX                      |  |  |
|                                                                                    |                       |          |                                                                                                                                                              |             | •        |                                                                                           |                           |                                                 |  |  |
| nd in                                                                              | vente                 | ed by    | <u>:                                    </u>                                                                                                                 |             |          |                                                                                           |                           |                                                 |  |  |
| Ker                                                                                | Kerim Kalafala et al. |          |                                                                                                                                                              |             |          | ASSIGNEE NAME: International Business Machines Corporation ASSIGNEE RESIDENCE: Armonk, NY |                           |                                                 |  |  |
| a C                                                                                | ONT                   | INUA     | TION APPI                                                                                                                                                    | LICATION,   | check :  | appropriate b                                                                             | ox and supply             | the requisite information:                      |  |  |
| ☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: |                       |          |                                                                                                                                                              |             |          |                                                                                           | of prior application No.: |                                                 |  |  |
| Vhich                                                                              | n is a                | :        |                                                                                                                                                              |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | Conti                 | nual     | tion 🔲 🛭                                                                                                                                                     | Divisional  |          | Continuation-                                                                             | in-part (CIP)             | of prior application No.:                       |  |  |
|                                                                                    | n is a                |          | ·                                                                                                                                                            |             | ·        |                                                                                           | 1 4 (0)5)                 | of action and Proceedings Many                  |  |  |
| <u>,                                    </u>                                       | Conti                 | nuai     | ion 🖵 L                                                                                                                                                      | Divisionai  |          | ontinuation-                                                                              | in-part (CIP)             | of prior application No.:                       |  |  |
| inclo                                                                              | sed a                 | are:     |                                                                                                                                                              |             |          | Applicatio                                                                                | n Elements                |                                                 |  |  |
|                                                                                    | _                     |          |                                                                                                                                                              |             |          |                                                                                           |                           |                                                 |  |  |
| 1.                                                                                 | ×                     | Filir    | ng fee as cal                                                                                                                                                | culated and | i transr | nitted as desc                                                                            | ribed below               |                                                 |  |  |
| 2.                                                                                 | X                     | Spe      | ecification having                                                                                                                                           |             |          | pages and including the following:                                                        |                           |                                                 |  |  |
|                                                                                    | а.                    | X        | Descriptive Title of the Invention                                                                                                                           |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | b.                    |          | Cross References to Related Applications (if applicable)                                                                                                     |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | c.                    |          |                                                                                                                                                              |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | d.                    |          | Statement Regarding Federally-sponsored Research/Development (if applicable)  Reference to Sequence Listing, a Table, or a Computer Program Listing Appendix |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | e.                    | ×        | Background of the Invention                                                                                                                                  |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | f.                    | <u> </u> |                                                                                                                                                              |             |          | nn .                                                                                      |                           | ·                                               |  |  |
|                                                                                    | g.                    | <b>X</b> | Brief Summary of the Invention  Brief Description of the Drawings (if filed)                                                                                 |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | у.<br>h.              | <b>X</b> |                                                                                                                                                              |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    |                       |          | Detailed Description  Claim(s) as Classified Below                                                                                                           |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | i.                    | <b>X</b> |                                                                                                                                                              |             |          |                                                                                           |                           |                                                 |  |  |
|                                                                                    | j.                    | Ø        | Abstract of the Disclosure                                                                                                                                   |             |          |                                                                                           |                           |                                                 |  |  |

## UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

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### **Application Elements (Continued)**

| 3.  | $\boxtimes$ | Drawing(s) (when necessary as prescribed by 35 USC 113)                                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |
|-----|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|
|     | 8.          | S Formal Number of Sheets 5                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |
|     | b.          | ☐ Informal Number of Sheets                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |
| 4.  |             | Oath or Declaration                                                                                                                                                                                                                                                                                             |  |  |  |  |  |  |  |  |
|     | a.          | ☑ Newly executed (original or copy) ☐ Unexecuted                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |
|     | b.          | Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |
|     | c.          | ☑ With Power of Attorney ☐ Without Power of Attorney                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |
|     | d.          | DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. 1.63(d)(2) and 1.33(b).                                                                                                                                                                    |  |  |  |  |  |  |  |  |
| 5.  |             | Incorporation By Reference (usable if Box 4b is checked)  The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein. |  |  |  |  |  |  |  |  |
| 6.  |             | CD ROM or CD-R in duplicate, large table or Computer Program (Appendix)                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |
| 7.  |             | Application Data Sheet (See 37 CFR 1.76)                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |
| 8.  |             | Nucleotide and/or Amino Acid Sequence Submission (if applicable, all must be included)                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |
|     | a.          | ☐ Computer Readable Form (CRF)                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
|     | b.          | ☐ Specification Sequence Listing on:                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |
|     |             | i. CD-ROM or CD-R (2 copies); or                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |
|     |             | ii. 🔲 Paper                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |  |  |
|     | C.          | Statement(s) Verifying Identical Paper and Computer Readable Copy                                                                                                                                                                                                                                               |  |  |  |  |  |  |  |  |
|     |             | Accompanying Application Parts                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
| 9.  | $\boxtimes$ | Assignment Papers (cover sheet & document(s))                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |
| 10. |             | 37 CFR 3.73(B) Statement (when there is an assignee)                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |
| 11. |             | English Translation Document (if applicable)                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |  |  |
| 12. | $\boxtimes$ | Information Disclosure Statement/PTO-1449   Copies of IDS Citations                                                                                                                                                                                                                                             |  |  |  |  |  |  |  |  |
| 13. |             | Preliminary Amendment                                                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |
| 14. | $\boxtimes$ | Return Receipt Postcard (MPEP 503) (Should be specifically itemized)                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |
| 15. |             | Certified Copy of Priority Document(s) (if foreign priority is claimed)                                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |
| 16. | $\boxtimes$ | Certificate of Mailing                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |
|     |             | ☐ First Class ☒ Express Mail (Specify Label No.): EU943994480US                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |
|     |             |                                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |  |  |
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(Only for new nonprovisional applications under 37 CFR 1.53(b))

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|    |   | Accompanying Application Parts (Continued)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |  |  |
|----|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|
| 7. |   | Additional Enclosures (please identify below):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |  |  |
|    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
|    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
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|    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
|    |   | Request That Application Not Be Published Pursuant To 35 U.S.C. 122(b)(2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |  |  |  |
| 3. | 0 | Pursuant to 35 U.S.C. 122(b)(2), Applicant hereby requests that this patent application not be published pursuant to 35 U.S.C. 122(b)(1). Applicant hereby certifies that the invention disclosed in this application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing of the application.                                                                                                                                                      |  |  |  |  |  |  |  |  |
|    |   | Warning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |  |
|    |   | An applicant who makes a request not to publish, but who subsequently files in a foreign country or under a multilateral international agreement specified in 35 U.S.C. 122(b)(2)(B)(i), must notify the Director of such filing not later than 45 days after the date of the filing of such foreign or international application. A failure of the applicant to provide such notice within the prescribed period shall result in the application being regarded as abandoned, unless it is shown to the satisfaction of the Director that the delay in submitting the notice was unintentional. |  |  |  |  |  |  |  |  |
|    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
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|    |   | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |
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|    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |
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#### Fee Calculation and Transmittal

#### **CLAIMS AS FILED** For #Filed #Allowed #Extra Rate Fee T tal Claims \$18.00 \$288.00 36 - 20 = 16 \$86.00 Indep. Claims 4 - 3 = 1 \$86.00 \$0.00 Multiple Dependent Claims (check if applicable) **BASIC FEE** \$770.00 OTHER FEE (specify purpose) \$0.00 **TOTAL FILING FEE** \$1,144.00 ☐ A check in the amount of to cover the filing fee is enclosed. The Director is hereby authorized to charge and credit Deposit Account No. 09-0457 as described below. ☑ Charge the amount of \$1,144.00 as filing fee. Credit any overpayment. □ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17. Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance. pursuant to 37 C.F.R. 1,311(b).

Dated: 10/27/03

William H. Steinberg, Reg. No. 28,540

IBM Corporation / IP Law Dept. IQ0A, Bldg. 040-3

1701 North Street Endicott, NY 13760

Telephone: (607) 429-4358 Fax No.: (607) 429-4119

cc: RECORDS

| CERTIFICATE OF I<br>Applicant(s): Kerim Kal | MAILING BY "EXPRESS I<br>afala et al.                            | MAIL" (37 CFR 1.10)                                                                        | Docket No.<br>END920030067US1 |
|---------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------|
| Serial No.                                  | Filing Date                                                      | Examiner                                                                                   | Group Art Unit                |
| Invention: AFFINITY-I                       | Based Clustering of Vect                                         | ORS FOR PARTITIONING T                                                                     | THE COLUMNS OF A MATRIX       |
| I hereby certify that the                   | following correspondence:                                        |                                                                                            |                               |
| Patent application and                      | corresponding paperwork, The                                     | of correspondence)                                                                         | 4                             |
| , ,                                         | n the United States Postal Service pe addressed to: Commissioner | ce "Express Mail Post Office to                                                            |                               |
|                                             | 10/28/03 (Date)                                                  |                                                                                            |                               |
|                                             |                                                                  | June M. Mitchell (Typed or Printed Name of Person  AfMl M. M.) (Signature of Person Mailin | g Correspondence)             |
| . •                                         | . <u> </u>                                                       | EU9439944<br>("Express Mail" Mailing                                                       |                               |
|                                             | Note: Each paper must ha                                         | ive its own certificate of mailing.                                                        |                               |
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